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RASPBERRIES—SOIL, CULTURE, AND VARIETIES.

The growing of small fruits as productive and remunerating crops, not only to the market gardener, but to almost every family owning a small garden plot, has become so general and so well appreciated, that we feel we can do no better at this time than to make a record of our notes on Raspberries, as we did last month on strawberries. Following in rotation after the strawberry, and before peaches or other stone fruits, except cherries, have become abundant, the Raspberry seems to supply a vacancy without which we could hardly furnish our tables or minister to the wants, tastes, and health of the human frame. In a commercial view, as a crop to be grown for profit, one year with another, we believe the Raspberry superior in its net returns to that of the strawberry; but its cultivation is not nearly as extended and general. Why it is so we can only account for by supposing the masses to have obtained an impression that the canes of Raspberries must be laid down and covered each winter in order to insure a crop, and again by supposing the mass of fruit-growers averse to anything like unto what may be termed extra labor. That this laying down was a requisite with most varieties known and grown some fifteen or more years since, we acknowledge; but at this time there are many varieties with large fruit and hardy canes profitable for market or private gardens that may be grown without any labor and care in covering. As a fruit for the table, no one among the small kinds possesses the richness and aroma of the Raspberry; and while there are some people who can not eat strawberries, we never knew one who did not relish and enjoy a dish of ripe Raspberries. Economically considered, they are also superior to strawberries, because of their less acidity, and therefore not requiring as much sugar to gratify the palate. For canning or preserving, the superiority of the Raspberry over other small fruits is such, that while many housekeepers do not put up strawberries, all do can or preserve Raspberries when they can be obtained.

Soil and Preparation.—It is said by some writers that the Red or Antwerp class of Raspberries must have a good rich clay loam soil in order to succeed; but while we concede that as the best, we have grown them in light dry sandy soil, equally vigorous in cane and productive of fruit, by simply spreading over the ground, early in June, a deep mulch of straw or old litter, and letting it remain until the commencement

of fall rains, when we remove it, to be replaced again the next June. By this method we have avoided that burning of foliage and drying away of the fruit too often complained of. The Black Raspberry seems more hardy and capable of enduring varied soils and climates, and hence it has for the past few years been more extensively planted than the Antwerp, although as a table fruit few, if any, of the varieties now in cultivation compare at all favorably.

FIG. 119.—*Mrs. Wood.*

As with the strawberry, the preparation of the soil, making it deep and finely pulverized, is a great requisite to success and profitable returns. In heavy clay lands, without this thorough preparation and cultivation the first year, the plants grow feebly or die out entirely, and the crop of one or two years is lost; and in light sandy soils we have found that the deeper we plowed the better, and that the application of mulch at midsummer was a necessary requisite.

Time of Planting.—Although early spring is generally advised as the best time to plant at the North, or where the ground freezes deeply, we have found fall planting, and then plowing up to the roots and covering them, quite as successful; and in clay lands the soil works easier and better. But we have practiced for some years taking the plants in July, and even into August, when the young canes are about half grown, placing the roots as we raise them into a bucket of muddy water and planting them, without any after watering, with perfect success, and had a good crop of fruit the following season.

Distance Apart.—The old rule of growing in hills, three by four or four by six feet, two or three canes in a hill, we consider very much like the advice to grow strawberries in hills, as only an inducement for the cultivator to work among his plants and keep them clean. We have for some years grown our Raspberries in rows, our canes standing along in the row sometimes two in a foot, sometimes one; and when we now plant we set a cane once in about sixteen to eighteen inches in the row, and the rows four feet apart, if of the Antwerp class; but for the Black Cap, or that class, we would give a plant two feet distance and make our rows six feet apart, that we might run our cultivator freely between the rows without injuring the lateral or side branches and fruit.

FIG. 120.—*Philadelphia.*

Cultivating.—In spring, early, we run a light plow, say four inches deep, all through between the rows, turning the earth from the plants and leaving our line of plants with about six to eight inches wide of unstirred soil. This we afterward work up with a pronged hoe, or with the spading fork, according as our hired men are Dutch or Irish. Afterward we run through the ground, from time to time, with the cultivator, until the time for putting on our mulch, which although not absolutely

requisite on clay loam soil, yet there we find its benefit in a saving in stirring the soil, provided it is a dry time.

Pruning, Tying, etc.—The training of plants to wires, stakes, inside of hoops, etc., although generally advised, and when well done presenting very satisfactory results and appearance, we have for some years discontinued, and confined ourselves to shortening back our canes and inducing thereby stronger and better laterals, with stiff stout canes that require no tying to stakes or wires.

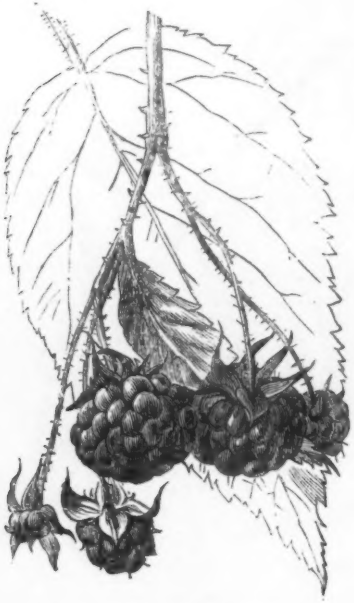

FIG. 121.—*False Red Antwerp.*

Varieties.—We shall not attempt to go over all the varieties of Raspberries that are now in cultivation, but will touch upon a few of the leading popular sorts, and note some new kinds which have come before us in fruit this year. Of the Black Cap varieties, the AMERICAN IMPROVED, or more generally known at the West as Doolittle's Improved, has been perhaps more extensively planted than any other. In good rich soils it is desirable, but in light or thin soils we can not see much improvement. It is a profitable sort, however, for market growing, as it bears shipment long distances and always in good order.

The SENECA BLACK CAP and WATERLOO are two new seedlings announced by Mr. Doolittle as possessing valuable qualities, both in size of their berries and in a longer period of ripening. We have been unable to meet with the fruit.

The MIAMI BLACK CAP may be a distinct sort, but we have, in gathering wild plants, obtained many that so closely resemble it as to lead us to doubt. It is a good berry, however.

OHIO EVERBEARING.—With us this has never given results satisfactory, but there are many growers with whom it has done admirably, and who would be unwilling to part with it. While we have always obtained fruit from the young canes in autumn, the quantity at that time, as well as in the spring, has not satisfied us that there was any profit in it.

WOODSIDE.—This variety is figured beautifully in Mr. Fuller's work on small fruits, and if it sustains one half the character there represented, must be a valuable sort. The cluster there shown has upon it some eight or nine fruits, all large and apparently grown, so that, like some varieties of peas, one picking would gather the whole crop. We have not seen the plant or fruit, but hope to do so.

MRS. WOOD.—This is a new variety, for description and drawing of which we are indebted to Mr. Elliott, of Cleveland, forwarded at our request. He describes it as of the Black Cap family, with very strong canes, dark brown red when mature; laterals abundant, stiff, and strong; producing clusters of numerous fruit, with a broad, roundish, oval, sharp-pointed leaf, rich dark green. Fruit large, double the size of the common Black Cap, of a purplish black color with a bloom, firm, rich, and

sweet; canes with spines. He says it is more prolific than anything of its class which he has ever met. Originated by Mrs. Wood, formerly of Rockport, Ohio, now of San Francisco, California.

PHILADELPHIA.—The productiveness and hardihood of this variety are so well known that we need to make no remarks. As a market sort, for light soils, it is undeniably a profitable variety. It will be seen from the illustration which we give of this variety, that the berry and length of fruit stem, with the spine on the fruit stems, bear a close resemblance to the drawing we give of one sent us by Mr. Elliott as the False Red Antwerp. Another year we hope to grow them side by side, and detect whatever difference there may be between them.

CLARKE.—This variety we have now grown some four years. It is a fine grower and a good fruit, the canes perfectly hardy. Mr. Elliott, of Cleveland, writes us that the plants he has of it so much resemble, in general appearance of the canes and fruit, that of the Kirtland, that he would like to gather the history of the Clarke. Perhaps Mr. Clark, of New Haven, will write it out for us. The Kirtland is supposed to be an old variety, not yet identified. It did not originate with Dr. Kirtland, but his name was attached to it by H. B. Lum, Esq., simply because plants he obtained came from the Doctor's grounds and were unknown by Mr. Lum. The variety was on the Doctor's place, so he tells us, when he purchased the property, and the old original bed is there yet. It is certainly one of the very best hardy old sorts, of good flavor and productiveness, but not quite firm enough for market transportation long distances.

SCARLET.—One of our neighbors last spring procured a dozen plants under this name from Mr. Carpenter, of New York. On examining them we find the two Raspberries originally sent out by Mr. Allen under his name, and which made such confusion for a time, by one being productive of fruit and the other of suckers. Both, we believe, were originally from a market gardener's grounds at Cleveland, Ohio. We think whoever claims to be a horticulturist, and to send out plants, should be certain, first, that the variety is distinct, and second, that there should not be two sorts where only one was desired.

BELLE DE FONTENAY.—This variety has with us this season proved really superior. It is not quite as early as some other sorts,

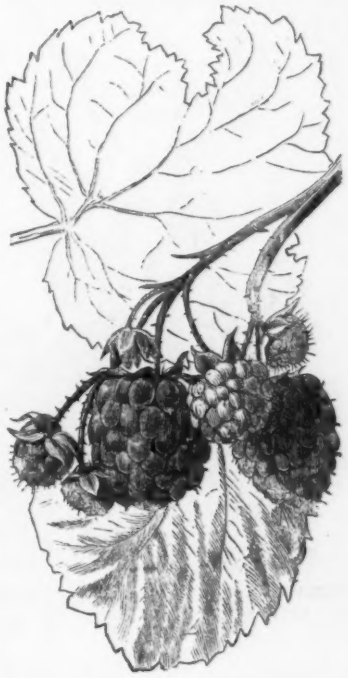

FIG. 122.—*Orange.*

but if most of the suckers, of which it has too many, are kept down, the stems become strong and stiff and bear abundantly; a really good, firm, although perhaps a little too acid, fruit.

HORNET—has with us, this year, done admirably well, giving large fruit and abundantly; and so also may we say of FRAN-

FIG. 123.—*Naomi.*

conia; but both of these varieties, like the Red Antwerp, require to have the canes protected in winter to produce a good crop.

BRINCKLE'S ORANGE, or Orange as it is now more generally termed, is unquestionably our best light-colored berry—large, rich, and sweet; and while the canes are the better for being laid down and protected, we have grown good crops from it without any protection.

DUHRING, with us killed all down last winter, and we have no fruit. Had it not come to us as hardy, we should have protected it. While, however, we have so many good and profitable sorts that are hardy, we can see no advantage in growing, except for amateur or pomological use, any new tender variety.

NAOMI.—Two years since we published a drawing and description of this variety, sent us by Mr. Elliott, who now writes us that with him, on stiff hard clay land, the plants have stood perfectly uninjured for two winters without any protection, and in their original grounds have never been injured in the least. The fruit is of the largest size—firm, but rich, juicy, and sweet; canes strong and productive. Mr. Elliott says it is by far the best hardy Raspberry of the Antwerp class with which he is acquainted.

CUSHING, COL. WILDER, FRENCH, and many others we have fruited and again and again examined, but we have nothing new to say of them, and at the same time consider that we have named the best varieties, and a sufficient number for any amateur, and perhaps too many for market growing.

DECAY OF THE CHERRY.—A friend writes us from Cleveland, Ohio, saying that "all the cherries in that section have again, almost without exception, rotted before getting fully ripe." He also says, "Heretofore much of this disposition to decay has been regarded as coming from rain and wet, foggy weather, and mainly has it been confined to the light-colored varieties; this year, however, the weather during the whole of June was dry, and the disease extended itself to Black Tartarian, Black Eagle, and some others of the dark-colored soils. The Osceola, Pontiac, Red Jacket, Rockport, and Monstreuse de Mezel have been about the only varieties of sweet cherries that have escaped, and they only partially."

PROPAGATING PLANTS BY LAYERS.

BY ANDREW S. FULLER.

THE same principles given for propagating plants by cuttings are also applicable to layers. In fact, a layer is only a cutting that is allowed to remain attached to the parent plant until it has produced roots through which it may collect sustenance for self-support.

Various methods are employed to produce this result, such as wringing, twisting, tonguing, or partially dividing that portion of the stem on which it is desired that roots shall be formed.

All these distortions of the stem or branches of the plant layered are for one object, that is, to check the downward flow of sap. Roots then become necessary for supplying sustenance to the cutting or layer, and are formed.

The most common method of preparing layers is that of making a tongue on the underside of the branch. The operation is performed thus: make an incision in the branch to be layered, just below a bud, cutting through the bark and into the wood to the depth of one quarter to one half its

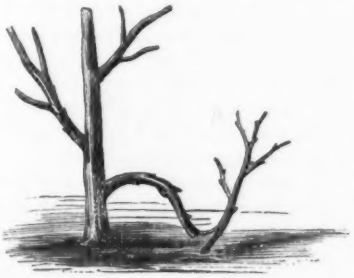

FIG. 124.

diameter, then pass the knife upward for an inch or more, splitting the stem lengthways, forming the tongue, as shown in fig. 124. The branch is then bent down and fastened in its place with a hooked peg, and that portion on which the incision is made is covered with soil or other material which shall exclude it from light and air, while at the same time keeping it moist, thus aiding the development of roots.

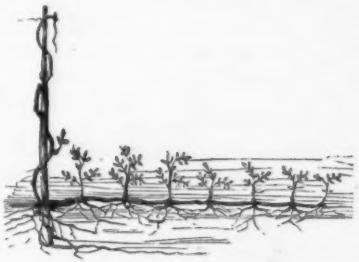

FIG. 125.

Twisting, coiling, or notching the branch, so as to partially separate the fibers, will often answer the purpose equally well as tonguing. Sometimes a ring of bark is taken off, partially if not entirely cutting off the downward flow of sap. Bending the branch at a very acute angle will often answer the same purpose, as the main object in all these distortions is to check, but not wholly prevent, the downward flow of sap, the layer receiving only a partial supply of nutriment from the parent plant.

Several branches may be layered from one plant, and it matters not whether it be herbaceous or woody, the general principles to be followed are the same. There is certainly a great difference in plants relative to the facility with which they produce roots; but it is equally as great in the herbaceous as in the woody. Some woody plants will produce roots in a few days by merely placing the branches on

the surface of the soil and covering with any material that will keep them moist; while others with the most careful manipulation will not produce roots in less than two or three years.

In preparing layers of those plants which produce very slowly, it is best to distort that portion which is buried as much as possible with safety, but with many kinds no disturbance of the natural condition is necessary. With nearly all species of trailing plants, such as wistarias, tecomas, clematis, etc., it is only necessary to lay the stems in a shallow trench, and when the buds push into growth, draw the soil back into place, each shoot producing a plant.

Roots will usually be produced in abundance the entire length of the old stem, as shown in fig. 125.

When roots are not produced as rapidly as desired, then the layered branch may be bent, as shown in fig. 126, which is a method usually practiced with the wistarias. Should the bending of the stem not prove to be a sufficient check to the flow of sap, a notch or tongue may be made on that portion which is covered with soil.

In preparing shrubs and trees for the

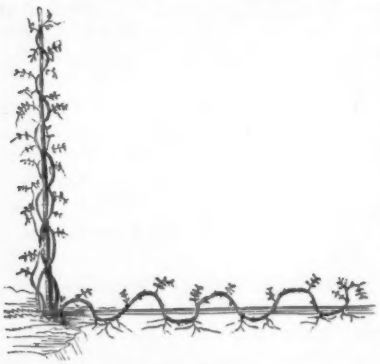

Fig. 126.

purpose of producing layers therefrom, it is often necessary to head them back quite severely the year previous, so that a large number of shoots shall start from near the ground. Plants thus prepared are technically called stools; and if all the shoots are layered in any one season, then none should be layered the next, but all allowed

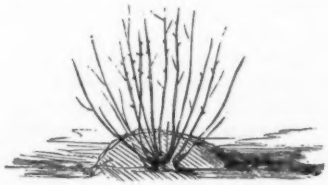

Fig. 127.

to grow unchecked, so that the parent plant may regain that strength of which it has been deprived by excessive layering.

Sometimes the shoots are not bent down, but the stool is banked with earth, as shown in fig. 127; and when the shoots have emitted roots from their base, they are slipped off from the main stock and planted out separately. The quince, hibiscus, paradise apple, and many other kinds of plants that produce roots readily, are extensively propagated in this manner.

It is more convenient for the purpose of layering if the branch is near the ground, yet it is not positively necessary, because soil or other material which will answer the same purpose may be elevated to the branch to be layered. A platform may be made upon which to place the soil, or boxes or pots filled with it may be hung among the branches of a tree and the shoots layered therein. But when this is done, it will require more care to keep the soil moist around the layer than if the operation is performed in the usual manner.

The proper time for making layers is as variable as that of cuttings. With some plants it is best to layer the young growing wood, while with others they may be put down at almost any time. But, as a rule, layers should be made while the plant is growing the most rapidly, because roots are produced at that time more readily than at any other. It is not always advisable to wait until growth has commenced

before making them, but the branch should be in position to produce roots when the proper time arrives.

With some plants it is better to make the layers in the autumn, for the same reason given for making cuttings at that time; but with others it would result in certain failure, consequently each species or family may require different treatment to insure success.

The particular advantages to be gained in propagating plants by layers are:

First. That it is a very simple process of multiplying plants, by which the merest tyro may propagate those species and varieties which require great skill by other methods.

Second. It is a certain method, as the parent plant sustains the layer until it has produced roots through which it may derive sustenances for self-support. Thus particular varieties of the oak, hickory, tulip, and similar trees which are usually called difficult to propagate, may be multiplied by those who are but slightly skilled in these matters.

Third. With many kinds of plants, much larger specimens can be obtained in less time than it is possible to produce them from cuttings.

HENSEL'S EARLY SEEDLING CHERRY.

I INCLOSE a few specimens of a seedling cherry which I believe will prove valuable. The original tree, of some age, stands on the property of Mr. G. W. Zahm, in the city of Lancaster, Pa.; the property was formerly owned by Mr. Hensel, and hence the name of "Hensel's Early" has been given to it. Mr. Zahm informs me that in ordinary seasons this cherry begins to ripen about the 5th of June, or a few days before Knight's Early Black. The tree is of moderate growth, but very hardy, a constant and great bearer; had a full crop this year when nearly all other kinds to a great extent failed, in consequence of the unfavorable weather just at the time of blooming. It is not disposed to rot. Mr. Zahm thinks it worthy of extensive cultivation, and if you think so also from this description, a notice of it in your journal may make it known. Mr. Zahm, who is a zealous amateur fruit-grower, will cheerfully furnish grafts to such as wish to try it. I inclose Mr. Zahm's note to me.

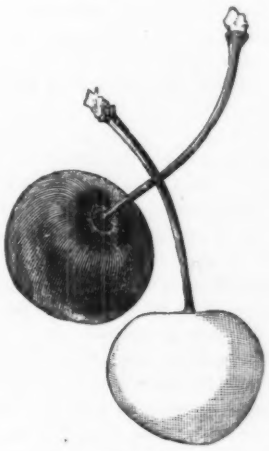

FIG. 128.

Very respectfully yours,

W. L. DIFFENDERFFER.

NEW HOLLAND, PENN., *June* 23, 1867.

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LANCASTER, *June* 24, 1867.

DR. DIFFENDERFFER—*Sir:* The cherries I send you are not a fair specimen of the fruit at all, they are from the inside of the tree—all others are gone. I have taken fruit off the same tree three inches in circumference. The tree is a moderate grower and very prolific—an accidental seedling named Hensel's Early Seedling.

Yours, G. W. ZAHM.

RASPBERRIES.

BY A. S. FULLER.

GRAPES and strawberries have, during the past few years, received so much attention, that we fear other small fruits have in a great measure been neglected.

This is particularly true of the Raspberry, a fruit whose merits entitle it to a prominent position among the *very best* productions of our gardens. It is certainly no more trouble to cultivate an acre of Raspberries than the same quantity of grapes or strawberries, and it is doubtful if upon an average they are any more profitable.

FIG. 129.—*American Improved.*

Raspberries have commanded from twenty-five to seventy-five cents per quart in many of our Eastern markets for several years past, a fact that has awakened a few of our fruit-growers to the importance of fully supplying the demand. One cause of the great scarcity of this fruit is probably owing to the want of practical information upon the best modes of cultivation, and the adaptability of different varieties to the various locations and soils. Very few people appear to know that the different varieties of the Raspberry are as variable in their character as regards their adaptation to soils and climate as other fruits, there being very few which are suitable for general cultivation.

We have probably depended too much upon the advice and recommendation of those cultivators who are located in situations favorable for growing the very choicest kinds. It is all very well for those who can produce the best, to talk of delicate flavors and delicious perfumes, but they should know that although this world may be a *nut-shell*, still it is a very large one, and that there is a great diversity of soils and climate as well as tastes among its inhabitants. The world is certainly too large, or the minds of some of its inhabitants too small, to comprehend its vastness. As a general thing, the experience of fruit-growers is mainly local, and it is to be feared in many instances their thoughts are equally so, or they would not, as they often do, extol or condemn a fruit from mere personal experience.

Every cultivator must have observed the great difference in soils even on a place of very limited extent, and if the proprietor is an observing man, he will select plants best suited to each. If this is true in regard to a few acres, how much greater must be the difference when we pass over several degrees of latitude, or from the rich bottom lands along our Northern

rivers, watered by copious showers throughout the summer, to the drifting sands and long drought which occur in some portions of the Middle and Southern States.

FIG. 130.—*Purple Cane.*

A man who prefers a Fastolff or Brinckle's Orange to the wild Black Raspberry certainly shows that he possesses a good taste; but he commits an error when he denounces others, who, as they can not produce the former, and can the latter, consequently accept it in preference to none. Because we can not grow the banana is no reason for neglecting the apple, or accuse those who do grow and appreciate it of being devoid of taste.

FIG. 131.—*Downing Red.*

The whole war of words causing the

estrangement of horticulturists in years past, and making enemies of those who should have been friends, should cease, and the question of, What *shall* we grow? changed to, What *can* we grow? There are a favored few who have the means at command of overcoming all the obstacles which soil or climate may offer, but the masses must seek both sustenance and pleasure without such artificial aid.

Striving to produce the best is certainly a very commendable action, but to ignore all other because the really superior kinds fail, is a weakness with which too many are afflicted. Experience has taught us that some of our best fruits will only succeed in few, and often very prescribed locations.

Although this has been the case heretofore with many kinds, yet with the increase in the numbers of varieties, some have been produced that appear to be as well adapted to as wide range of latitude and to different soils as those which are inferior. But with the newer kinds more experience is needed, before it can be positively decided which

Fig. 132.—*Hornet.*

are worthy of being recommended as varieties for general cultivation over a wide extent of country.

Among the few which have become decided favorites in the past few years, we may name the different varieties of the Black Cap Raspberry.

The American Improved (fig. 129) is probably more extensively cultivated than any other, although at the West the Miami and Ohio Everbearing are grown in considerable quantities. The hardy character of this class thus early ripening, and firmness of the fruit, make them very desirable market varieties.

Although the fruit is naturally rather dry and the seeds quite numerous and large, still there are many people who prefer them to other varieties of Raspberries. Of this class the following new ones promise to be valuable: Gardiner, Surprise, Thornless, Summit, Seneca, and probably two or three others.

The great merit of this class of Raspberries is their adaptation to different kinds of soil and climate, succeeding in

many portions of the country where the Antwerp family as well as our native Red Raspberry (*Rubus strigosus*) entirely fail, although given the best of care.

PURPLE CANE RASPBERRIES.

These are classed by botanists as varieties of the Black Cap species (*Rubus occidentalis*), and they succeed with few exceptions over as wide a range of country, and in as great a variety of soils. The old Purple Cane Raspberry (fig. 130) has long been one of the standard varieties for home use, and in some sections it has been quite extensively grown for market. The plant is very hardy, a rampant grower, producing few suckers, being mainly propagated from the tips of the young canes.

The fruit is rather small and brittle, but of good quality, and is produced in great abundance.

FIG. 133.—*Souchetti.*

PHILADELPHIA.

This is certainly a very remarkable variety, which is rapidly gaining favor in localities where the Antwerps fail. Fruit medium to large, globular, dark reddish purple, moderately firm, subacid, and second rate in quality.

The above may appear to be a poor recommend to a variety which we have called remarkable, and it certainly would be if it possessed no other merit except that of size and quality of the fruit. But the excellence of the Philadelphia consists in its great productiveness, hardiness of the plant, vigorous growth, tough and enduring leaves, rendering it capable of withstanding the hot, scorching weather of August even in the Middle and Southern States, where many other kinds utterly fail.

Those who plant the Philadelphia Raspberry are very sure of getting a bountiful

crop, even if it is not so exquisite in flavor as the Orange or Fastolff. It is a good fruit, and one that will please the million. The Ellisdale is a very promising variety of this class found in Iowa, but it has not been sufficiently tested at the East to determine its true value. The Hildreth is another variety; the fruit is of most excellent quality, but rather soft for transportation.

ANTWERP FAMILY.

The Hudson River Antwerp probably has the greatest reputation as a market berry; still, its cultivation is confined to a few localities.

FIG. 134.—*Clarke.*

Where it does succeed, it is certainly one of the most profitable and best varieties known. The plant is tender, and requires protection in winter; it also requires a rather heavy soil, and fails in seasons of drought. It is but little cultivated south of New York city, and the same remark may be applied to a majority of this class.

There are certain gardens and farms where they are grown, but they are so few in number, that in truth it may be said they are not generally successful.

One of the best varieties ever produced in this or any other country was raised in Philadelphia. I refer to Brinckle's Orange, which has probably a greater reputation and is more extensively grown near other cities than that of its nativity. The Orange Raspberry should be the amateur's pet, for it will repay him for extra care and culture, and careful protection in winter, with large beautiful fruit of the very best quality.

There are many varieties belonging to the Antwerp family that are really superb, but they require particular care, such as protection in winter, and a rich heavy soil in locations where long droughts are not common.

Among the best known we will name the Downing, French, Franconia, Fastolff, Fillbasket, Hornet, Souchetti, Wilder, and others, nearly if not equally as good.

Among the newer varieties, the Clarke (fig. 134) promises to be an acquisition. The fruit is large, bright crimson, and of the best quality. It is very productive, a strong and vigorous grower, retaining its foliage until very late in the season. This variety was raised in Connecticut about ten years ago, and the originator says that he has never protected his plants, and that they have not been injured by the cold in winter or heat of summer. I have allowed my plants to remain unprotected for the past three winters, and they have received no injury, which appears to be quite remarkable, as others of apparently the same class are invariably winter killed unless protected.

To give winter protection to Raspberry plants is in itself not a very expensive operation, particularly with those kinds that have long flexible stems, that can be easily bent down and covered with soil. Still, it adds expense to cultivation, and most people would avoid it if possible.

Whether we have as yet obtained really first-rate varieties that are perfectly hardy in our Northern States, may not be fully determined, but from present indications we are led to believe that such kinds have

been produced. The Belle Fontenay and Marvel of the Four Seasons are really hardy varieties; and when the immense quantity of suckers which they produce is restricted to a half dozen to each stool, they bear a fair crop of large and good-flavored fruit.

These last two varieties with the Yellow Marvel of the Four Seasons, offer us a foun-

FIG. 135.—*Arnold, No.* 1.

dation from which to produce excellent hardy sorts. Mr. Charles Arnold, who has been so successful in hybridizing the grape, has already made some experiments in hybridizing these last-named varieties with the native White Cap Raspberry.

His seedling No. 1 is a pale yellow variety of good quality, and the plant is very stocky and apparently very prolific. No. 2 is also a very promising variety of the same color. No. 3 is a beautiful orange-colored variety, of most excellent flavor.

FIG. 136.—*Arnold, No.* 2.

Among the red varieties, No. 2 is a very firm berry, of good size and quality. There are several more of Mr. Arnold's seedlings, which we have not fruited, but judging from those we have, we are disposed to think that some of these varieties will be decided acquisitions, as all are hardy even in Canada.

BEST SOIL FOR VINEYARDS.

Looking over the pages of the new *Journal of Horticulture*, whose claims have been so prominently placed before the American public, our attention was caught by an article from the pen of the Hon. E. W. Bull, entitled "Field Culture of the Grape in Massachusetts." This article is mainly occupied with a discussion of the kinds of soil best adapted to bring the grape to perfection, and after a few flings at the "popular treatises" and their authors, Mr. Bull lays down the rule, that for high-flavored grapes the soil ought not to be rich and heavy, but light and warm. Now in this there is certainly nothing new. Most "popular treatises" that we have been able to consult tell us the same thing, but at the same time they assert that if the conditions of dryness and high temperature can be combined with rich soil, the fruit will attain its highest perfection. Hence in borders designed for grapes to be grown under glass, the soil is of the richest character, and complete success is to be attained only when the vine is supplied with abundance of food.

So far we agree perfectly with Mr. Bull, although we confess that certain reports which have reached us from vineyards at the West have shaken our faith in *light* soils, at least under all circumstances.

In the Horticulturist for May, 1866, F. R. Elliott writes as follows: "In my immediate section, on the south shore of Lake Erie, we have grapes growing in almost every variety of soil; and so well is the matter now understood by our best wine-makers, that they make a decided variation in the prices paid for grapes. Vineyards of Catawba, growing on sandy or loamy soils, find sale at a very low price, to the wine-makers. Some refuse to use them at any price, while they pay from seven to ten cents per pound for the same variety upon limestones and clays. Indeed, we have men who claim they can detect the soil in which the grape was grown by seeing the bunch."

But Mr. Bull fortifies his position with an extract from Haraszthy, which contains an analysis of the soil of the famous vineyard, Chateau Margaux. We are not of those who utterly despise and condemn chemical analyses in application to soils. It is true we have little faith in most five-dollar, or even twenty-five dollar analyses, but at the same time we think that a good deal of the outcry that has been made against the analysis of soils has been done for "buncombe," and we have reason to believe that, with one or two exceptions, the fiercest denunciations have come from men who could not make an analysis if they were to try, and could not discriminate between a valuable and a worthless analysis when both were presented to them.

The analysis noted by Mr. Bull is obviously very imperfect, but at the same time it does afford us certain data which may lead to a just appreciation of the character of the soil. It is as follows:

Oxide of iron	3.341
Alumina	1.590
Magnesia	0.263
Soluble silicates	0.380
Phosphoric acid	0.147
Potash (?)	1.291
Carbonate of lime	0.891
Organic matter	6.670
Insoluble residue	85.427

Mr. Bull adds the following comments: "This analysis shows the large proportion of more than three and one quarter per cent. of oxide of iron, about one and a half per cent. of clay, one and one quarter per cent. of potash, with phosphoric acid and carbonate of lime in small quantities, and only six and one half per cent. of organic matter; the rest, 85.427 per cent., being insoluble remainder. Not a very rich soil, one would say; yet this vineyard produces the finest grapes of the district."

Let us consider the subject a little further. This analysis is quoted by Haraszthy from the French work of Rendu—Ampelographie Francaise—where it will be found, page 431. It was made by a certain "Professeur" Peplowski, of whom it is improbable that any of our readers have ever before heard. It gives us little or no clue to the physical character of the soil—no man could tell from it whether the soil is light or heavy. The iron, magnesia, soluble silicates, etc., form but 14.573 per cent. of the entire bulk of the soil. Of what does the 85.427 per cent. insoluble matter consist? Is it clay or sand, or a mixture of both? and if the latter, then in what proportion? It is true that Mr. Bull *infers* that the soil contains but one and a half per cent. of clay, but then Mr. Bull evidently does not know that clay is not alumina, or, rather, that alumina is not clay. It is a disputed point among chemists whether or not alumina ever occurs *free* in the soil. Some maintain that free alumina is only found in the ruby and a few other precious stones. However this may be, it is very certain that alumina is not clay—meaning by that term the chemical compound to which heavy soils owe their peculiar characteristics. This substance is *hydrated silicate of alumina*. Now the term *insoluble* is merely a comparative term. Sand is usually regarded as insoluble, and we venture to say that if Professor Peplowski found any sand in the soil of the vineyard of the Chateau Margaux he entered it among the "insoluble" substances. But sand is not insoluble, even by the ordinary means used by chemists in making analyses. It is soluble in hydrofluoric acid, and when fused with carbonate of soda and some other substances it is very readily soluble. In the sense, however, in which sand is insoluble, clay is insoluble too; and therefore as the menstruum is not specified, we are left totally in the dark as to the character of this insoluble portion, and, as we before remarked, we can not tell whether the soil is light or heavy. We must therefore content ourselves with a consideration of the character of the soil as regards its richness in plant food. Mr. Bull says it is not very rich. So far as this analysis is concerned, we beg leave to differ from him.

First, then, as regards organic matter. This soil contains 6.67 per cent. of organic matter. Mr. Bull thought he was making a liberal addition to his soil when he added forty loads of muck, which is probably equal to forty tons per acre. The soil under consideration if eighteen inches deep contains one hundred tons of such matter. Professor Voelcker says that any soil containing over six per cent. of organic matter should be classed with the vegetable molds. The soil of Chateau Margaux is evidently a vegetable mold.

The percentage of iron is, as Mr. Bull says, very large. We do not know what the influence of this ingredient may be. It is worth investigation, however.

In regard to potash we have no data. It is true that Haraszthy gives potash 1.291 per cent., but this is entirely unwarranted by the original. Rendu gives it "potasse de soude, 1.291." We confess that our knowledge of French is too limited to enable us to understand this as it stands, and we suspect that a typographical error has crept in, changing "et" into "de," and that it should read "potasse *et* soude"—that is to say, potash *and* soda, instead of potash *of* soda. We do not insist upon this translation, for we know that ridiculous mistakes have arisen from verbal interpretations.* Mr. Haraszthy could evi-

* One of the most amusing instances of an author being led astray by verbal criticism occurs in Ik Marvel's "Wet Days at Edgewood." The author, in attempting to show that Sir Walter Scott had no knowledge of farming, says: "Again (and I count this a surer indication), he puts in the mouth of Cromwell (Woodstock) a mixed metaphor of which no apt farmer could have been guilty. The Puritan general is speaking of the arch-loyalist Dr. Rochecliffe, and says, 'I know his stiffneckedness of old, though I have made him plow in my *furrow* when he thought he was turning up his own swathe.'" We are satisfied that the word *swathe* is a misprint for *sward*. Scott's knowledge of English was pretty thorough, whatever his

dently make nothing of the statement, and preferred to cut the Gordian knot by stating what was absolutely incorrect.*

Potassa and Soda.—Soda is generally considered of little value, and if the reader will consider the position of the vineyard under consideration, he will see that the soil is very probably highly impregnated with soda from the sea. Rendu describes its location thus: "Under the name of Medoc is comprised that tongue of land which lies between the Gironde and the ocean." A reference to any map of France will show that the west winds from the Atlantic will no doubt carry over the surface of the country sufficient spray to impregnate the soil thoroughly with salt, probably with more than is absolutely required for successful vine culture.

But how about the potash? If the soil contained 1.291 per cent., then it would contain nearly twenty tons of potash—rather more than Mr. Bull would undertake to add per acre.

Of phosphoric acid the soil contains .147 or 2.2 tons per acre. This is equal to about eight or ten tons per acre of common bone dust.

Of carbonate of lime there is enough for all the wants of the plant.

We think, therefore, that a careful consideration, even of the above imperfect analysis, will convince any one that the soil of the vineyard of Chateau Margaux is in reality very rich—rich in the ordinary sense, and rich in all the constituents required by the vine.

I regret that I have been obliged to occupy so much space, but the subject is an important one. The proper soil for vineyards is a point that demands the most careful attention on the part of all interested in vine culture. The man that will thoroughly investigate this subject will deserve the thanks of every grape-grower, and I think that carefully considered observations on the character of the soil of our different vineyards would afford much sound data upon which to base such an investigation. We therefore hope to have numerous reports from different parts of the country. Perhaps, if your readers have not been wearied with what I have presented, I may hereafter give you a resumé of what Rendu, Odart, Julien, Franck, Ladrey, and others say of the soil and management of the famous vineyard Chateau Margaux, of which Rendu says, "Lafitte and Latour themselves pale by the side of this incomparable nectar;" and Biarnez says, in form little more poetical,

"Idole des gourmets, c'est le plus grand des trois,
Il est seul sur son trône, il est le roi des rois."

VITICOLA.

knowledge of farming may have been, although it would be strange if a boy brought up as Scott was in the south of Scotland could have been ignorant of farming. On the whole we are satisfied that the criticism which we have quoted is one "of which no *apt* farmer could have been guilty."

* Strong, in his work on Grape Culture, quotes Haraszthy's translation without acknowledgment, and falls into the error of stating the *potash* at 1.291 per cent. Authors that copy at second-hand are very apt to fall into mistakes of this kind.

SILVER-LEAVED MOUNTAIN ASH.—A friend writes us that recently, at the gardens of Messrs. Ellwanger & Barry, Rochester, N. Y., he saw a seedling mountain ash of their growing, with leaves of a silvery character on their edges and occasionally mottled over and through them, a novelty of great beauty and attraction. Messrs. Ellwanger & Barry have been long known as propagators of rare and choice trees, and as originators of many new ones. During the past two years, we believe Mr. Ellwanger passed most of his time in the gardens of the Old Country, examining and purchasing everything desirable. We wish he would write us a little account of the many new things he saw and procured, especially those trees of variegated and colored foliage.

NOTES ON THE JUNE NUMBER.

PROPAGATING PLANTS BY CUTTINGS OF RIPE WOOD.—Like most of Mr. Fuller's writings, this contains full explanation of the why and wherefore cuttings should be made at certain seasons, and also why a particular way of making them is more desirable, although, perhaps, not essential to success. I have practiced for many years putting cuttings in the ground where they are designed to grow, the next coming summer, in the fall, and I have found that with gooseberries, currants, etc., etc., as soon as the main or terminal bud has fully formed and matured, I can commence making my cuttings without reference to the fall of the leaf. The same also with the grape; as soon as the fruit may be said to be fully ripened—I don't mean colored, but thoroughly matured—I can cut and put in my grape cuttings and grow them without having to resort to any patent process. And, by-the-by, many a grape cutting is lost, as all the shoots, which are often rubbed off when a vineyard has not been early gone over, if preserved, will grow readily and make good plants the following year.

SEA-SIDE COTTAGE.—Truly one of the prettiest designs, although not specially new, which has been figured. Will not the designer write out somewhat of specifications as to cost, naming the price to be paid for lumber, brick, mason, and carpenter work?

PURE NATIVE WINES, WHAT AND WHERE ARE THEY?—I have read this with considerable interest, as just at this time great attention is being paid to the making of wines from our native grapes, and while every originator of a new grape or vendor of a special variety makes his statements relative to their values, I find very conflicting views thereon among grape men.

Reading, recently, a writer in the *Country Gentleman*, I notice he does not any more accord full credit to the statements made by the originator of the Iona than yourself. That writer takes up a record of grape musts from varied native grapes by scale of Oeschle, among them Iona, and compares the record with some of the best foreign vintages, in which comparison the Iona is exhibited so much ahead of the foreign varieties as to give one, at least, a reason for doubting its correctness. Your remarks on the Concord may, perhaps, in some sections be qualified, although the result of value would be about the same. You say it has "too much acid;" now, in some sections this may not be perfectly true, but as it has not sugar enough in its compound, the result of its value for wine is in no way affected. Again, in speaking of its comparison as allied to *claret* wine, you may have been in error, as perhaps it has not tannin sufficient to be there classed; but probably you wrote more to give the idea of its being a light wine, and therefore used a name which generally is known to designate light thin wines. It is possible, and I believe the fact, that there is wine by some known as *Italian* wine, which would more perfectly correspond to it, but as it is rarely known or spoken of, your term was perhaps the correct one.

NEW MODE OF GRAFTING THE VINE.—I had read this before in the magazine from which you copied the article, and rejoiced that you gave it to the readers of the HORTICULTURIST, as everything pertaining to grape growing is of great interest at this time to a very large portion of the horticultural world.

A SUBURBAN RESIDENCE.—Plain and massive, and for a city block or houses closely contiguous, doubtless very good. I confess, however, to a love of open porches, or verandas, rather, as part and parcel of what I consider a suburban residence—that is, a house situated on a good-

sized lot or plot of ground in which are growing trees, flowers, fruit, etc. So many days occur when it is pleasant to sit in the open air, and yet be protected by a wall from currents of wind, or the sun; and so heavy are our dews at seasons of the year, rendering it unsafe to sit exposed to the sky, that a porch or portico seems to me to belong to a residence where the object is pure open air, and the association with and study of tree, fruit, and flower, as much or more than a parlor.

WOMEN IN HORTICULTURE.—Mr. Fuller, in this record, has given credit only to one woman in this country as connected with horticulture. Why could he forget such women as Mrs. Wood, of Ohio, who originated several new raspberries; or Mrs. Haskell, long prominent as the president of a horticultural society in Michigan, and who has given great attention to fruits as well as flowers; or the many, many women whose names are yearly associated and identified with themselves in all our Western horticultural exhibitions. While I accord to woman a place in her own garden, to rear new varieties of fruits and flowers and to cultivate those known, I do not think any special credit due to one who leaves her own sphere to become absorbed in a legitimate business, which requires an immense amount of physical labor and association with the ruder portions of men.

ABOUT PEAR-TREES.—Pleasant reading, but really without any practical point, except it be to ignore the use of names as applied to fruits. What would the writer have done had he grown the pears he ate, and finding one among the dozen kinds that pleased him more than all the others, desired to plant more trees of it? I trow he would have had to find some one more skilled than himself, or else been compelled to make a hap-hazard guess, that after his young trees came into a bearing state would have resulted in disappointment.

GRAPES.—I wish this writer would import a little of the climate of Persia, Turkey, and Greece, and distribute it among our vine growers, so as to enable them to avoid mildew, etc., which unfortunately is too much a disease and trouble in this country.

The writer says, "We have kinds enough, throwing aside six tenths as worthless, that selected with judgment and cared for with the energy of American people, will make America as good a wine country as any on the globe." Please, Mr. E. H., select us out those four tenths, and tell us the right care, and I will guarantee to have the labor performed.

THE AMERICAN JOURNAL OF HORTICULTURE.—Are you not a little severe on this journal? Because its editor East is young, and its editor West writes long articles that grasp but little, should you censure the one for supposing the horticultural world have never before read anything, or the latter for being voluminous? Why grumble because that journal chooses to re-stereotype a record of one of the best and most worthy men in horticulture, as if the thing had never been, or that that man's record was not better known over the Union and abroad than by those who prepared the matter or published the magazine? But aside from these old re-hashes of matter and copyings from abroad without credit, there is in the magazine a great deal that is good, and I advise every reader of the HORTICULTURIST to take and read it. They will then find that they can not get along any way without the HORTICULTURIST and the *Gardener's Monthly*, even if those journals do not profess to absorb all the talent of the country. REUBEN.

SILVER-LEAVED OAK.—Among the many trees with ornamental foliage, there is none, perhaps, more truly beautiful, or that would attract attention on a lawn, than the silver-leaved oak. It needs only to be seen to be admired.

EXHIBITION OF STRAWBERRIES AT THE WESTERN NEW YORK HORTICULTURAL FRUIT-GROWERS' SOCIETY,

AND NOTES ON VARIETIES IN THE GROUNDS OF MESSRS. ELLWANGER & BARRY.

Mr. F. R. Elliott sends us the following notes on the Strawberries shown at the Rochester (N. Y.) Exhibition, June 27th, and also his notes of varieties examined in Messrs. Ellwanger & Barry's grounds. He says: "The exhibition was not as numerous in varieties as I had expected, nor as large an attendance as I had supposed the great interest felt in the growing of Strawberries would have drawn out. Nevertheless there was really a good show of berries, and among them many new ones, besides a host of seedlings, under numbers, most of which were of the first or second year's fruiting. Most of the fruits shown bore evidence of having been grown under only ordinary care; a few samples only exhibited extra attention and culture having been given to bring out their best qualities. Seedlings under numbers were shown by Messrs. Ellwanger & Barry, Jacob Moore, and Thomas R. Peck. Mr. J. Keech had four new sorts on the table, which he has named respectively General Grant, General Sherman, General Sheridan, and General Meade. These varieties were stated to have been all grown from seed of the Russell mixed with Triomphe de Gand—the flowers all perfect.

General Meade is large, rich, bright scarlet, conical; seeds deeply imbedded; quality very good.

General Sheridan, medium size, dark rich red, somewhat irregular in form; seeds light colored; flesh light red, pretty firm, promising well for market growing.

General Sherman, medium size, light rich scarlet red, long, conical in form; seeds deep; flavor deficient.

General Grant, good medium size, irregular in form; dark red, or about same color as Wilson; somewhat acid, but sprightly in flavor, and claimed by the originator as very early, which would be its only claim to favor.

The seedlings of Mr. Moore are claimed as hybrids, and presented very good promises of value, this being, as I understood, their first year of fruiting. Number 73 was large, of a rich red, and very fine flavor; and should it prove a good bearer will be a great acquisition. Number 39 had a rich flavor, with pretty firm flesh, and promises well.

Thomas R. Peck, of Waterloo, had thirty-six seedlings, and from among them I find my notes commend as of good quality and promise the following numbers, viz., 3, 5, 8, 11, 16, 23, 27, and 49.

Of the nineteen seedlings shown by Messrs. Ellwanger & Barry, I made my notes, but afterward visited the plants in bearing, and selected from them the following numbers as being desirable to prove further by another year or more of fruiting, viz.:

No. 32, which has light pale green broad foliage, with large dark red, firm, roundish cockscomb fruit, with a delicious Alpine flavor.

No. 26, large, dark red, sweet, and promising.

During the meeting of the Society, a vote was taken as to the best six varieties for amateur growing, resulting in twenty-eight ballots, or votes, each one of which had upon it the Triomphe de Gand; while twenty-two votes were cast for Wilson, twenty-two for Hooker, seventeen for Jucunda, sixteen for Agriculturist, nine for Russell, four for Green Prolific, and four for Trollope's Victoria. Not a vote was given for Hovey, or for Burr's New

Pine, the one certainly the handsomest, and the other the highest flavored berry, of the whole strawberry collection. In this connection of varieties and their values, the President, H. E. Hooker, remarked, that amid all the new sorts brought forth from year to year and heralded with loud clamor as being vastly superior, but very few ever endured a half dozen years, and the records as well as the tables of exhibitions would show our best varieties now grown to be mostly those of from fifteen to twenty years ago. On the best modes of growing Strawberries there was considerable discussion, resulting, as near as I could gather, that Triomphe de Gand and other foreign varieties should be grown in hills and with high cultivation, in order to obtain satisfactory crops or good-sized fruits; while the Wilson, Early Scarlet, etc., might be grown in rows and produce very great crops, really making a gain in favor of the latter, of just the amount of outlay in preparing the ground, procuring mulch, etc., etc., and favoring them as the varieties to be grown by men of small capital. The package most desirable to pick in and send to market was the round quart box, in which each berry is displayed at top without showing any stem, and so carried to and sold in market. It is far preferable to the slovenly manner of Cleveland, Cincinnati, and other Western cities, where they are tumbled into half bushel drawers, and when sold scooped out, mashing and bruising at least one fourth of the berries.

After examining berries on the exhibition tables, I went to the grounds of Messrs. Ellwanger & Barry, where I had the pleasure of examining over seventy varieties under name, and among them many quite new and rare.

The *Durand* is a berry of medium size, dark rich red, flattened, conical in form; broad leaf with short foot-stalks; of fine quality, but only moderately prolific.

King Arthur is a foreign sort; large, dark red; good foliage and good quality.

Dr. Nicaisse, also a foreigner, with pretty good foliage and extra large fruit of irregular form; white flesh, and in flavor about like Jucunda, to which it is superior in size.

Tilip's Rival Queen is another foreigner; large, firm, very rich in quality; good foliage and strong foot-stalks.

Lucas, also foreign; large, dark red; handsome, fine, and with good foliage.

Napoleon III., foreign; a good bearer, large good fruit, quite late.

Ambrosia, foreign; large, good, and with strong foliage.

La Constant, so much praised by some of the best pomologists about Boston, does not do well here, nor has it succeeded with me. The foliage burns badly, and before one knows it the plants are all dead.

Metcalf's Early, medium or small, good quality, moderately prolific, quite early; has been highly praised by our Western friends; but as I saw it, would not be very desirable.

Among varieties evidently valueless, I noted Cornucopia, Le Titian, Great Eastern, Sir Harry, Seedling Eliza, British Queen, Honour de Belgique, Garibaldi, Hooper's Seedling, Myatt's Prolific, and many more; while among those most desirable, the Triomphe de Gand and Wilson are kinds always to be depended upon for a crop.

TREES TO PLANT.—If you are designing to plant out any trees the coming fall or spring, now is the time to watch the fruits as they ripen, and make your notes of those you think desirable. Early in September make up your list and send it to the nurseryman, for all honest dealers execute their orders in rotation as received, and those first received are most likely to be filled with the best trees.

EDITOR'S TABLE.

To Contributors and Others.—Address all Communications, for the Editorial and Publishing Departments, to Geo. E. & F. W. Woodward, 37 Park Row, New York.

Hammonton, N. J., *July* 15, 1867.

Messrs. Woodward: The following notes are the result of this season's experience with a few varieties of strawberries:

Philadelphia.—This variety was the first to ripen, is of good quality, fine scarlet color, good size, productive, and a very vigorous grower, and although not so great a bearer as Wilson's Albany, I think it the best early variety yet introduced.

New Jersey Scarlet.—This variety is quite productive, and very good for the table, but is a few days later than the Philadelphia; is *not* scarlet, but of a dull dark red with a bad-looking surface; makes a bad appearance in market, and does not sell well. It has perfect flowers, and I think yours can not be genuine, because from the source from which I received mine, and comparing them with others, I have no doubt they are correct.

Metcalf's Early.—Ripened with New Jersey Scarlet, but much of the fruit rotted before it was fully colored, and it is inferior in most respects to either of the preceding. A prominent grower at Moorestown remarked to me after fruiting it this season, that "Metcalf's Early had played out."

Wilson's Albany.—This is undoubtedly the most productive, and stands more hard usage than any other variety; but it ripens one half its fruit in a few days when strawberries are plenty, and consequently does not always bring as much money as some less productive kinds.

Agriculturist.—Sometimes gives good crops, and when well grown is not surpassed in quality, and about half the berries are of the largest size; but it does not always yield well, and unless well grown, is frequently about as poor a specimen of a strawberry as I ever tasted.

Jucunda.—Very poor grower, leaves burn badly, *very* poor bearer, and very poor in quality; and I may add this is the verdict of three fourths of all with whom I have conversed, including some who have grown it in the vicinity of Pittsburg. Plants obtained from Mr. Knox.

Brooklyn Scarlet.—This is a strong grower, a pretty good bearer when well manured and cultivated, of large size and brilliant scarlet color; too soft for transportation, but it is not excelled for the table.

Abraham Lincoln.—Since changed to "The President" by its originator, (?) Mr. Plattman. Not the *first* time its name has been changed, as several good judges who have examined it on my grounds agree with me fully in pronouncing it the Agriculturist.

Yours truly,

Wm. F. Bassett.

Hanging Evergreens for Winter.—Some of the simplest and yet most beautiful embellishments for winter window decorations have been pots of the English Ivy (*Hedera*). The plants should be grown in pots in a cool, partially shaded situation during summer, being careful to have a stone or brick under the pot to prevent the roots gaining earth beyond the pot. In late autumn these pots of Ivy, with their dark, rich, green foliage, clean and glossy, can be transferred to the window of a sitting-room or library, and even should the temperature run down to zero, they are not at all injured.

CANNING FRUIT.—The season of canning fruit having arrived, we give the following extracted directions as the best and most practical of the many writers on the subject.

The *Farmers' Advertiser*, by the way an extremely good paper, published at St. Louis, Mo., says, relative to canning fruit:

"*Imprimis*—Can the fruit the same day it is gathered. More than half the secret of having fine preserved fruit lies in this simple direction.

"*Secundo*—Never can fruit without adding as much sugar to it as you would to prepare it for the table. This is imperative, else your fruit will inevitably be *leathery; cook it in*, I should say at the rate of one quarter of a pound to one pound of fruit, *at least;* but taste and try, as I did, and when it suits your palate, cease from all saccharine matter.

"And now for the *modus operandi:* Pare and extract the pit; cut into halves and plunge into cold water until ready to cook, else your peaches will be black; this, of course, does not apply to other kinds of fruit. Place your cans in any vessel where they can stand at least half way up in boiling hot water, which keep so until sealed. I usually take a large dripping-pan and put it on the top of the stove at one side, while my preserving-kettle is on the other. Make your sirup, and when it comes to a boil, put in your peaches and let them cook (if clings) until you can pierce with a piece of broom corn. If freestones, when the sirup boils up over them the first time, skim out and put into the cans. When the latter are full of the peaches, fill up with boiling hot sirup, wipe off the tops with a rag wet with cold water, being careful that no juice remains on them, then put on the covers, remove from the water to the stove hearth, and seal.

"Everything must be *hot*, from the beginning to the end; hot sirup, hot cans, hot fruit, hot sealing-wax, and, harder than all, hot and blowzy hands and faces, just when the thermometer stands at blood-heat in the shade. Oh! ye lords of creation, it is quite as hard work as 'to plow and to sow, to reap and to mow,' that your *ardent* halves are performing for your toothsome delight the coming winter.

"All small fruits are subjected to the same process, except that the rule for them is simply to allow them to come to a boil, and not remain longer in the sirup. Strawberries, to retain their color and flavor, require more sugar, and to be put into stone, glass, earthen, or *anything but tin*. I prefer the quart stone jars, with tin covers. The wires which come with them are superfluous. The same is true of blackberries. Tomatoes I scald, peel, and then bring to a boil again, with a little salt added, when I put them in *new tin*, and seal. I have never been fortunate with glass or earthen jars. If stone jars are used, be sure that you buy dark colored, well baked and glazed ones, not the yellow."

The annexed method of canning fruit was furnished at the New York Farmers' Club, by Mr. Powers, of Oswego County, New York:

"I will suppose your fruit and glass cans all ready. I prefer cans with glass covers. I scald the fruit in a large tin pan, with juice or water to cover it. Put half a teacup of cold water into every can, and fill up with hot water. Put the covers and rubbers also into hot water. Now empty a can and fill up with hot fruit, and then another. Let them stand open till the hand can be held upon them without burning. As soon as filled, cut writing paper the size of the can, one for each, and when cool slip one over the fruit entirely, and fill up the can on the top of the paper with boiling juice, and seal at once. Ladies, try this way. The fruit will never mold, and keep any time if you don't eat it. The papers keep the fruit from rising to the top of the liquid. There is no use of setting cans into water to heat them, or of putting them into quilted bags—it is too troublesome. I let the fruit shrink, and then fill up to the cover as close as possible. Ladies must be governed by their own common

sense. Men attempt to give directions, but their wives have to tell them, and they are likely to forget."

NOTES ON PEAS.—In our last number we spoke of Carter's First Crop having bloomed in advance of all others planted at the same time. Now, having grown and eaten of some thirty varieties this season, we feel prepared to say that with us a selection of peas another year will be Carter's First Crop, McLean's Advancer, Lord Raglan, and Champion of England; and perhaps for yet a later one, we would take the Missouri Marrowfat. McLean's Advancer comes directly after Carter, when planted at the same time, and is a large pod, productive, and an exquisitely sweet and tender pea. Lord Raglan follows, and is but a day or two in advance of Champion, but it is sweet and large, and fills a void of two or three days otherwise left without peas. Champion of England all growers now know and acknowledge as one of the best.

Napoleon and Harrison's Glory come at the same time, and are very similar, with good pods, but the peas are not sweet.

Ringwood Marrow is earlier than the two last named, but a tasteless although large pea. Eugenie is later, and a pretty good pea, but it is not productive. Blue Scimetar has large pods, but all do not fill. Veitch's Perfection is a good one, and so is Competitor, and many others; but our trial and after-decision is in favor of the four we have named as a collection, all to be planted at same time, and in same manner and soil, and from which we gather a succession of the very sweetest peas.

BUDDING the pear on pear stocks, and apples on their kind, is generally performed this month. The cherry on Mazzard or Morello stocks should have been done last month—but the bark of many trees will yet peel well, and it may now be done. On Mahaleb stocks we prefer the last of this month, or early in September; and so also for budding pear on quince. Too early budding on these late-growing stocks is apt to cause the bud either to throw off or be grown over. Peach budding should be left just as late in the fall as the bark will peel well and freely.

FRUIT IN SOUTHERN ILLINOIS.—From a record of the Illinois State Horticultural Society, it is estimated there are south of Centralia, on the Illinois Central Railway line, 500 acres in strawberries; 516,400 peach-trees; 78,000 pear-trees, and 208,875 apple-trees; and these are exclusive of the plantings during the past spring, which, from what we learn, have been to the extent of nearly, if not quite, one third more. Raspberries and blackberries are also largely grown there, and grapes have become almost as much an item of care and interest as in the other favored grape sections.

KEYES' TOMATO.—The plants of this tomato resemble so closely a kind we have grown before, that we desire to ask of Mr. Keyes a history of its origin. Will he oblige us by giving it? When the seed was sent out last spring, the statement was made that the variety was thirty days earlier than all others. So far from this being the case in our own grounds, we find it to be a week later than Powell's Early, and to ripen at the same time as the kind first mentioned.

THE POMOLOGICAL MEETING AT ST. LOUIS.—From all we learn, the next meeting of the American Pomological Society, at St. Louis, September 11th, will be most numerously attended; but unfortunately we also learn that in many places the fruit of pears, peaches, and apples have so many of them dropped, that great disappointment will result to many fruit-growers, in the lack of varieties they had hoped and intended to exhibit. Our country is great and wide, and we look, notwithstanding the deficiency in some sections, for a grand show.

NORTH ANDOVER, MASS., *June* 20, 1867.

MESSRS. WOODWARD—*Dear Sirs:* I take a subscriber's liberty to bore you a little. I am on the point of putting up a plant-house and grapery—a span-roofed house.

(1.) Now, I find all span-roofed houses tend to spread at the base. How can it be obviated?

(2.) About here I find they advocate setting the vines outside and bending them into the house. Is it best? By so doing I can see that the foundation can be firmer.

(3.) In Danvers I saw a new house lean-to, curvilinear roof, on iron rafters. It looked very nice. The sash bars were so arranged that the contraction and expansion of the iron would not affect the glass. Have such houses been tested, and should you advise the use of them?

(4.) Do you consider the boiler more economical than the flues?

I hope you may consider my questions worthy of attention, and if any suggestions occur to you, they would be most thankfully received.

I am yours, most respectfully,

FRANCIS F. DOLE, M.D.

1. Span-roofed houses can not spread if they are properly constructed. A glass house, if intended to be permanent, should have foundations of brick or stone, and the ridge of the roof should be supported by posts four by four inches, resting on brick piers placed every ten feet apart. See fig. 137.

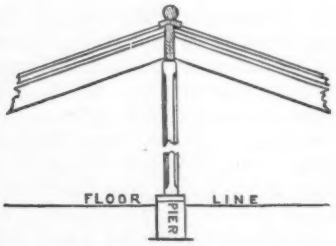

FIG. 137.

2. Our practice is, in every case, to plant the vines inside of the house, the foundation of which is built upon piers of brick (fig. 138), or upon posts, if the foundation

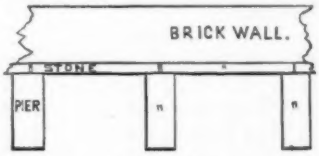

FIG. 138.

is to be of wood. The vines are thus allowed free access to the outside, and are better protected from sudden changes of temperature than if a portion of the cane is on the outside.

3. Iron for the roof of green-houses has not found much favor in this country, from the fact that our sudden changes of temperature create expansion and contraction of the metal to such an extent as to cause serious breakage of glass. Even in the milder climate of England this difficulty prevails. Of late years many devices have been put forth to obviate this difficulty, the best of which is the invention of Mr. Beard, for which he has secured a patent, which is illustrated in the London *Florist and Pomologist*, from which our cut is taken, one half of full size. (See fig. 139.) In this case the sash-bar is in two parts, the upper secured to the lower by means of screws. A strip of asphalted felt on each side of the glass forms an elastic bed, separating it from contact with the iron. Large glass, twenty by thirty inches, is used; and when the angle of the house is greater than forty degrees, the glass is

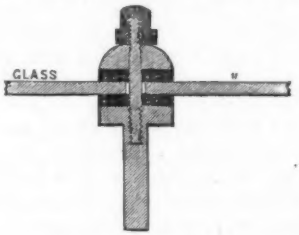

FIG. 139.

laid end to end. With a less angle the glass so laid we have found to drip badly at joints, from the moisture of the house, as well as to leak in violent, driving rain-storms. It is said by the inventor to be better in such cases to lap the glass. When the glass is lapped, the covering bars are made the same length as the glass. If it is laid end to end, then two or three squares may be covered.

4. The flue system of heating is by far the most economical as regards the first outlay; and for small detached houses, a well-built flue, if carefully managed, is an efficient mode of heating; but for a larger class of houses the hot water has many and great advantages, among which may be mentioned less fuel, no dust, smoke, or gas in the house, no repairs for years, and the ability to equalize the heat throughout the house, as well as to heat two or more houses from one boiler.

PEOLONIA, NORFOLK COUNTY, VA.

MESSRS. G. E. & F. W. WOODWARD—*Gents:* As you requested, in answer to my last letter relative to my quarter-acre strawberry patch, I herein inclose you the result for this season.

My bed is now seven years old, and this season I shipped my berries myself to New York and Philadelphia. The fruit is finer and the vines were more productive than ever. Independent of what I have eaten, and we did not stint ourselves, I netted on the quarter acre $700. Some sold in your city, by my agent, at $1 50 per quart, per crate; and I sold some here at $2 per quart. The last of my berries sold in New York at fifty cents, when the best Jersey Seedlings were in opposition to them. I commenced picking on the 15th of May.

The demand for plants this season has induced me to let the vines run to suckers, or I should have had a chance to pick berries, as usual, until late in July. Northern visitors, and every trucker in this section, have looked in on these strawberries with an expression of the greatest astonishment; and in fact I have the Agriculturist, Jucunda, the Lorio, Prince's Welcome, Albany, and a number of others, all under the same treatment and condition, and they really fade into insignificance alongside of this Empress Eugenie, as to beauty, flavor, size, and adaptability for transportation.

Now, what do you think of seven-year-old strawberry beds? I think I can keep this one in existence seven years longer, with the same results, if I had not allowed it to make runners.

If I were to tell you my plan of arranging the land to make so permanent a result, you would be astonished at its simplicity. But knowing how valuable an editor's time is, I do not desire to trespass upon your patience, for fear it might no longer remain a virtue. Yours, most respectfully,

F. W. LEMOSY.

POULTRY.—Almost every one keeps poultry, and while we have no interest ourselves in the different breeds, we have of late been at times much amused at the bragging spirit shown in some poultry articles, and especially in that kind which so confidently puffs the Brahmas, because we think the writers about as well posted on the delicacy of flesh as some who write on grapes and pears are on quality of fruit. Our own experience, after ourselves breeding many varieties, and paying very high prices for Shanghais and Brahmas, is that the colored Dorkings are unquestionably the best in all respects—in that they are hardy, only moderate eaters, good sitters, good layers; the young come early to maturity, and the form of the bird on the table is superior to all others, while its meat, even on old fowls, is delicate, even to the flesh of the legs. The Brahmas are good winter layers, great eaters, small eggs, comparatively, with thick shells, while the flesh of very young birds is good; but if kept to above half grown they are coarse, and the legs and wings, especially, are tough and stringy, and always with a yellow hide rather than skin, that almost resists cooking process.

Budding.—The season of propagating by budding, or inoculating as it was earlier termed, commences with the cherry. If old trees are to be changed by this means, they should be the first to be operated on, as the growth is completed earlier on old than young trees. Young stocks of Morello should be worked also earlier than Mazzards; while the Mahaleb makes a growth so late in the season, that often it can be budded successfully all through September. All the fruit books give the *modus operandi* of shield budding; and we will only suggest that it is always safe to insert the bud on the north or northeast side of the tree, because of the drying heat of the south and west sun in summer and of the sometime injury caused by warm suns in winter, exciting the bud or sap vessels during the day and rendering them extra sensitive to the cold of the succeeding night.

At a meeting of the Western New York Fruit Growers' Association, held at Rochester, June 27, the best six varieties of strawberries for amateurs were voted upon. Twenty-eight ballots were cast, with the names of six varieties on each ballot. The result was as follows: Triomphe de Gand, 28; Wilson, 22; Hooker, 22; Jucunda, 17; Agriculturist, 16; Russell's Prolific, 9; Green Prolific, 4; Trollope's Victoria, 4.

Raspberry and blackberry canes that have ripened their crops of fruit should be at once cut away, thus giving all the nourishment of the root to the new canes, as well as more light and air around them to mature and perfect their wood and buds, preparatory to next year's fruiting.

What Varieties of Pears are Most Certain to Set their Fruit.—A correspondent writes us that he has "recently been through and among thousands of dwarf pear trees, and that while the majority of them had bloomed freely and cast their blooms without setting or holding their fruit, he found the Louise Bonne de Jersey and Beurre d'Anjou the least affected; most if not all the trees of these varieties have set more or less fruit, and some of the former quite abundantly."

Mildew on Grapes.—At the time we write this, July 10th, we have just returned from visiting several vineyards of Isabella and Catawba grapes, and have found considerable mildew. The growth of vines up to this time has been almost unprecedented, and while we have no desire to croak, we think grape-growers must watch carefully and use preventives or remedies freely, or otherwise be prepared for more disease of the vine than is usual.

Lawns.—During this month, August, the grass on lawns should not be cut very close, as if so done, it is liable to burn and dry out the roots, and the spaces to fill with false and wild grasses. Those who are about to make new lawns for another year should now commence the labor of trenching or plowing and subsoil plowing very deep. The lawn should be made and allowed to settle a week or two, or during two or three good rains before sowing the seed and leveling up, and the seed should be sown as early as the season of cool nights and frequent rains comes on. Some writers advise the use of grains, as rye, oats, etc., to be sown with the grass-seed; but as, according to the general law, the stronger overpowers and gradually destroys the weaker, we have found the use of any coarse grain injurious rather than beneficial. In the making of lawns we have at times had the handling of very light sandy soil, and when compelled to do the best we could with it, without aid from top-dressing, etc., we have used oats in the fall, for the purpose of holding it from blowing, and have made our second sowing of seed after the oats had grown an inch or so. We use Red Top, Kentucky Blue Grass and white clover at the rate of from four to six bushels to the acre.

CUTTINGS of heliotrope, geraniums, etc., should be struck during this month. As they grow, pinch back frequently in order to make the plants bushy and strong. In potting, do not use too large pots; small pots and repotting is far better than the use of too large a size at first.

NAPOLEON III. STRAWBERRY.—MESSRS. G. E. & F. W. WOODWARD, 37 PARK ROW, NEW YORK, CITY—*Gents:* Your letters are received, acknowledging receipt of the sample of the strawberry Napoleon III., and we regret to learn that they arrived in such condition as not to enable you to judge of their quality. The fruit is large to very large (the samples sent you giving a fair average size at that time, not having sent the largest or the smallest berries).

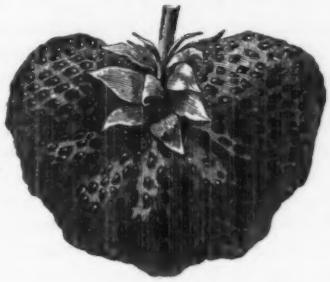

FIG. 140.

The variety may be described as irregular, flattened, varying from oval to cockscomb-shaped, of a handsome rosy-red color, shading to darker red in the sun, and waxy blush in the shade; flesh of delicate, snowy whiteness, rather firm, and of sprightly, high flavor, with a delicate aroma; plant vigorous and healthy, with large dark-green foliage; very productive—exceeding in that respect anything in our collection, except Wilson's Albany; in season later than the Wilson, succeeding it; flowers perfect. For shipping, we fear it may not prove sufficiently firm, but as an *amateur* berry it is not *excelled*, and will be especially valuable from its lateness. The variety was obtained from the originator, Mr. F. Gloede, in 1864, and has succeeded admirably with us since. Compared with Jucunda, it is not quite as attractive in color as that beautiful and popular variety, but of much higher flavor, more vigorous growth, and greater productiveness. We inclose photograph of a good-sized berry.

Truly yours, EDW'D J. EVANS & CO.

YORK, PENN., *July* 1, 1867.

WOODBURY, CONN., *July* 15, 1867.

EDITORS OF HORTICULTURIST: The strawberry season is over, and the yield has been a good one. Triomphe de Gand is our favorite, though we are pleased with Agriculturist, Downer, Russell, and last, though not least, Hovey. The raspberry crop is ripening up, and the Antwerps are bearing profusely. The crop of wild red raspberries is the largest in our recollection; the boys and girls are gathering them by the pailsful, which readily sell at eighteen cents the quart. The grape crop looks promising.

The mildew appeared on the Delaware July 1st, and a few days later on Iona, Israella, Adirondac, Allen's Hybrid, and Diana. Catawba, Concord, Hartford, Northern Muscadine, Union Village, and Ives are wholly exempt. I have a few of the first-named vines planted on a thin soil with subsoil of gravel, that the mildew has not attacked. Yours, E. SPERRY.

SEEDS should be gathered as they ripen, placed in tight, dry paper bags, and laid in drawers or on shelves, where they will not be liable to absorb moisture.

WEEDS at this season of the year come rapidly to maturity, and the careful cultivator will watch and destroy them without mercy, knowing that one plant permitted to seed will supply him with much unnecessary labor the coming year. If you have careless neighbors, try and induce them to at least mow the weeds in their grounds before they ripen their seed.

PEARS.—It must be remembered that few if any of our early pears ripen well if left on the tree. As soon as they will detach freely from the tree, at the base or junction of stem and tree, by raising them slightly, they should be gathered and laid away in dark shallow drawers and between layers of flannel. Two or three days will usually bring out their highest colors and mature their juices to the greatest perfection.

METCALF'S EARLY STRAWBERRY, we notice, has been pronounced a failure in Southern Illinois, as not specially early.

LENNIG—STRAWBERRY.—We see no reason for calling this strawberry Lennig's *White*, for it is not a white berry, although when partially ripe it is greenish; when fully ripe it is only light greenish just at the apex, and the balance a delicate pink red. We suggest that hereafter the addenda of *white* be omitted when describing it. As a berry for amateur growing it is one of the very best, of high and pleasant flavor, and when well grown more than moderately productive.

NEW STRAWBERRY, CHARLES DOWNING.—Our esteemed and most valued friend Charles Downing comes before us now with his name attached to a new strawberry. The seedling promises well, but there are so many features of vitality, viz., hardihood, productiveness, adaptation to soil, etc., that we confess our regard for Charles Downing makes us almost regret that his name has been attached to a strawberry, or at any rate until it had been tried and proved in all parts of the States. Charles Downing is known all over this and the Old Country as one of the best and most honest of all pomologists, careful and correct in his decisions, with a fine and thoroughly cultivated taste; and while we would always keep his name and his many virtues before the people, we do not wish it associated with any fruit except one that proves universally of the best. We therefore suggest that the originator of this strawberry cause his plants to go into the hands of true men in all our States and sections for perfect trial before he offers it for sale. There are plenty of men who would take and try and report, and reserve to the originator all the plants if he so desires.

LARGE YIELD OF STRAWBERRIES.—It is recorded by W. C. Flagg, Esq., Secretary of the Illinois State Horticultural Society, that David Gow produced six thousand five hundred quarts of strawberries from a measured half acre, or at the rate of four hundred and six bushels to the acre.

THE PLUNGING SYSTEM.—Although plunging pot plants is an old practice, yet in our wanderings we frequently find amateurs, and even professional gardeners, who permit their pots of plants to stand out exposed to the dry hot air of summer and into the chill nights of autumn without a thought of the effect such alternations in temperature have upon the foliage. Some gardeners use for plunging their pots spent tan bark, others sawdust, while we confess a preference for clean sandy loam. In forming our plunging bed for the season, we bed the bottom with flat stones, place our pots, and fill around and among them with our sandy loam, always, by the way, keeping our level with the surrounding surface, and having a good drainage from under our flat stones. It is only necessary to make a trial of the plunging system for one season to convince any one of its advantages in health and vigor of plants, over the too common practice of leaving the pots exposed to changes of temperature, moisture, etc., etc.

LIQUID MANURES, soap-suds, wash, etc., applied once a week to dahlias, roses, etc., will cause them to grow vigorously and double the size and beauty of their blooms. Be careful in applying not to wet the foliage, but make a little trench around each plant, pour in the liquid, and afterward fill up again with dry earth.

WEIGELA, GOOSEBERRY, ETC.—*Messrs. Editors:* Last year, and the year before, that very good man Charles Downing sent me several Weigelas. Last year they flowered; and again, now, as I write, the dark red one is in flower—a beautiful thing, one or two weeks earlier than rosea, darker and richer in color, with its clusters or trusses of flowers covering every stem. Is it Groenwegenii? I suppose it is, and if so, let me say that all planters of shrubs should have it.

Another good thing he sent me was the Mountain Seedling Gooseberry, but I have almost failed in growing my cuttings of it put in last fall at same time as the Houghton, and in the same manner. Is it any harder to propagate? or were my cuttings (possibly) less strong than my Houghtons?

ADDIE.

[We agree with you in advising the Weigela Groenwegenii as a beautiful shrub, and in the gooseberry propagating think your cuttings were perhaps made a little less in length, and some of them of less mature wood than in the case of the Houghton. —ED.]

TOLONO, ILL., *June 27, 1867.*

MESSRS. G. E. & F. W. WOODWARD, NEW YORK—*Gents:* You seem to indorse quite fully Husmann's work, and yet I notice that in the HORTICULTURIST you insist that vines should be summer pruned, or pinched, so as to leave three or four leaves beyond the last bunch. Husmann as strongly recommends pinching back to ONE leaf, and gives his reasons for his practice at length. Will you, in the HORTICULTURIST or otherwise, explain this discrepancy. DANIEL BRADLEY.

[In indorsing any work which we may do, it must not be supposed that we indorse every item therein, for no book has yet been written without some errors. We indorse Mr. Husmann's grape-growing views and detail of practice as being far in advance of any other author, and the first man who has dared to step out of an old beaten track; but our experience has not been in favor of pinching the bearing branch back to one leaf beyond the fruit, and our reasons for not doing it are, that we think by leaving three leaves we develop more perfect sap to swell and assist in perfecting the fruit than can be done by the one leaf. Laterals of course come in as aids, but in our case we have all the time three leaves to Mr. Husmann's one, and we do not think we have any too much foliage to aid and assist under the influence of our very hot sun.

No two books give a like direction, and in grape-growing hardly any two varieties of vines will succeed alike under the same treatment. While we differ from Mr. Husmann, we consider him a very capable and practical man, and in holding our own views do so with respect and esteem for those of others.]

BLIGHT IN THE PEAR.—Pear trees should be watched carefully at this time for the appearance of blight. Without asserting that amputation of the limb is a remedy or preventive, we can safely say that, as it must be done some time, the sooner done on appearance of disease the better. We have practiced cutting the branch a foot or more below any visible sign of disease, and in some cases have entirely checked its progress.

BOOK NOTICES.

AN ELEMENTARY TREATISE ON AMERICAN GRAPE CULTURE AND WINE MAKING. By Peter B. Mead. Harper & Brothers. Price, $3.

After a careful perusal of this book, we can not consider it strictly an emanation from P. B. Mead. Its object professedly is to teach the amateur gardener and vineyardist, but the evident intention is to set forth the immense superiority of the Iona and Israella grapes above all other varieties, and thus to advance the interests of their originator, to whom the author is indebted for many of the engravings. Mr. Mead gives us full and explicit details of the various modes of training and cultiva-

tion in Europe, leaving his readers to infer that all improvements in grape culture have been discovered only there. He disdains even a passing notice of American grape-growers or American authors on grape culture. Have not such men as Longworth, Chorlton, Allen, Ellis, Remmelin, Buchanan, Husmann, or Fuller put forth an idea, or by their practice done aught to advance the cause of grape culture in this country? and that, too, with varieties of the vine demanding a different mode of treatment from those of Europe? The fathers of American grape culture, we are to judge from the book, are the author and the originator of the Iona; they have brought forward varieties, and introduced, practiced, and improved upon systems of training that leave nothing further to be desired. In a new book on such a subject we look for new ideas, but find nothing that has not been said, and *well said*, before. The author claims to give a simple record of his own practice and experience, and would lead us to suppose that he had a practical knowledge of the various processes of planting, pruning, and training. Those who know him best may ask, where is his experimental garden, that they may view the results of his labors?

In typography, engravings, and binding, the book reflects credit upon its publisher; but the work ought to have been entitled Dr. Grant's Catalogue Revised and Improved.

VINEYARD CULTURE. Improved and Cheapened by A. Du Breuil, Paris. Translated by E. & C. Parker, of Longworth's Wine House, Cincinnati; with Notes and Adaptations to American Culture, by John A. Warder. Robert Clarke & Co., Publishers, Cincinnati, O.

We have received some proof-sheets in advance, of a work on "Grape Culture," as per title above named. In the preface of the American edition, the editor says he desires to aid and abet all advance in grape culture, and also says we have now "started in the right direction," because we have avoided the errors of early planters in attempting to acclimatize our foreign grapes. In this, would not our American editor have done better—although, perhaps, not so well paid—had he been willing to condense his own knowledge into an American work? We think he would. But here is the work. Du Breuil is a capable man abroad, and undoubtedly handles the vine as there grown, and as to its habits, with knowledge and skill; but we well know the same course will not answer here, and hence we can see nothing gained to the multitude in publishing, or, rather, republishing, foreign ideas and teachings, although commented upon by an American. "Smith's Landscape Gardening" is a pretty good indication of the advantages resulting from Americans editing a foreign work.

GEYELIN'S POULTRY BREEDING IN A COMMERCIAL POINT OF VIEW. With a Preface Introductory, by Charles L. Flint, Secretary Massachusetts State Board of Agriculture. Published by A. Williams & Co., Boston. Price, $1 25.

We have been more or less engaged in rearing poultry for many years, having gone through all the breeds, and at last settled on the Speckled Dorking as combining all in all the most good qualities, and our experience convinces us that the meat of poultry can be grown pound for pound at a less cost than beef. The work here presented to the public conveys more plain and practical directions regarding breeding, keeping, etc., of fowls than we find in any other work on poultry, and ought to meet a ready and extensive sale.

CHEMISTRY OF THE FARM AND THE SEA. By James R. Nichols, M.D. Boston: A. Williams & Co., Publishers. Price, $1 25.

This is a series of short and familiar lectures on the chemistry of various items connected with the household farm, and the riches supplied in salts, etc., from sea plants. It is plain and descriptive, and to the young or transient reader a work of interest and value.